MEDICINE

28
399

HIS LEG PACKED IN ICE, Joseph Niedermier calmly reads his German-language newspaper just an hour and a half before undergoing amputation. His bandaged, gangrenous foot protrudes from the ice, which extends beyond the tourniquet site at mid-thigh (*see p. 118*). The rubber sheet has been thrown ' but normally it is wrapped around the leg. The melted ice is funneled off by sheet into a bucket which stands at the foot of the bed. The patient's leg has be ice for seven days.

ICE ANESTHESIA

A NEW TECHNIQUE OF SURGICAL REFRIGERATION EMPYS COLD TO DECREASE THE RISK IN AMPUTATIONS OF BADLY MAGED LIMBS

Ice has long been a minor tool of medicine. Since cold constricts blood vessels, ice has been applied to reduce inflammation. Since cold deadens nerves and thus acts as an anesthetic, ice has been used to relieve pain. Now doctors have adapted ice to a new surgical technique, using refrigeration to treat damaged limbs and provide a shockless amputation anesthetic. Developed by Doctors Frederick M. Allen and Lyman W. Crossman of New York City, ice anesthesia has cut down the high mortality rate of poor-risk amputation cases, such as the one pictured on these pages.

When Joseph Niedermier (*above*), 68, was brought into City Hospital, New York City, on March 21, he was delirious, in great pain and had a temperature of 103.6° F. His left foot was gangrenous as a result of hardening of the arteries, which had closed down the blood vessels supplying the leg. To save his life amputation was necessary. His general condition was so bad, however, that with ordinary treatment, the shock would almost certainly have killed him.

Instead of resorting to ordinary methods, doctors packed the leg in ice. Within three hours tissue metabolism was reduced to a minimum by the cold and its nerves were deadened. Pain, spread of infection, production absorption of poisons were halted. Freed from comfort and fever, the patient regained the sngth to undergo amputation. On March 28, ter seven days on ice, the leg was amputated. old had so numbed the leg that no other anesthic was needed. The patient suffered no pain r shock and recovered nicely from his surgica rdeal (*see p. 121*).

Refrigeration is also eing used to avoid many amputations entirely. I slowing down local tissue reactions in a lim damaged by accident or disease it often gives te body a chance to make its own repairs throughatural healing processes.

LIFE APRIL 22, 1946
PP. 117, 118 and 121

CONTINUED ON NEXT PAGE

THE SHAVE IS **BETTER** WHEN THE LATHER STAYS **WETTER**

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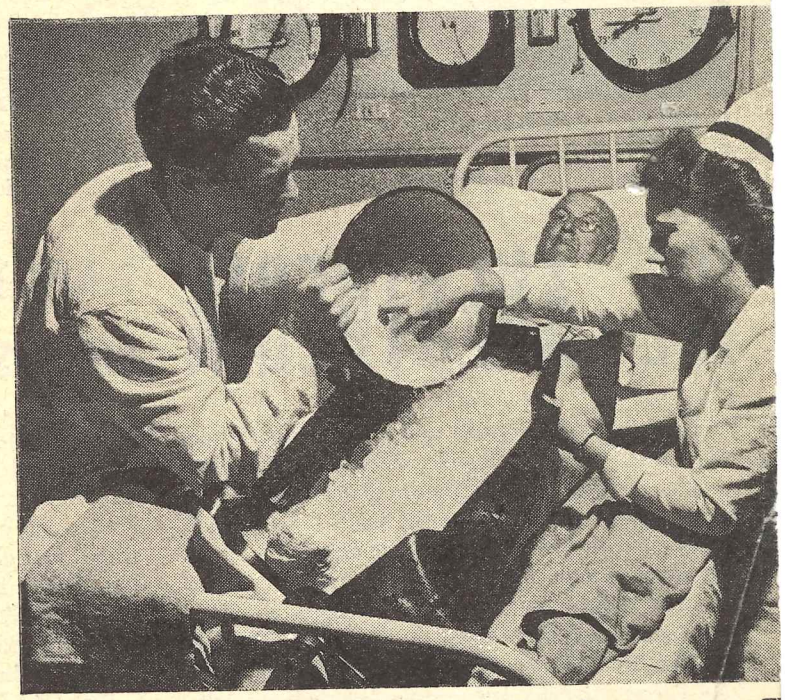
Ice Anesthesia CONTINUED

REFRIGERATED LEG is bound by a tourniquet, applied three hours b fore the amputation. Mark above knee is for saw-line, mark below is for in sion. Circulation had been so impaired that a high amputation was necessa

SKIN TEMPERATURE of the thigh is taken with a thermocouple, a ver delicate type of thermometer. The needle pressed against thigh records 40° low enough for complete anesthesia. Normal skin temperature is about 95°



MORE ICE is packed around the leg to maintain its low temperature. T leg is so numbed that the patient feels no cold in it. In spite of the ice a the tourniquet around the upper thigh, the stump tissues will not be damage

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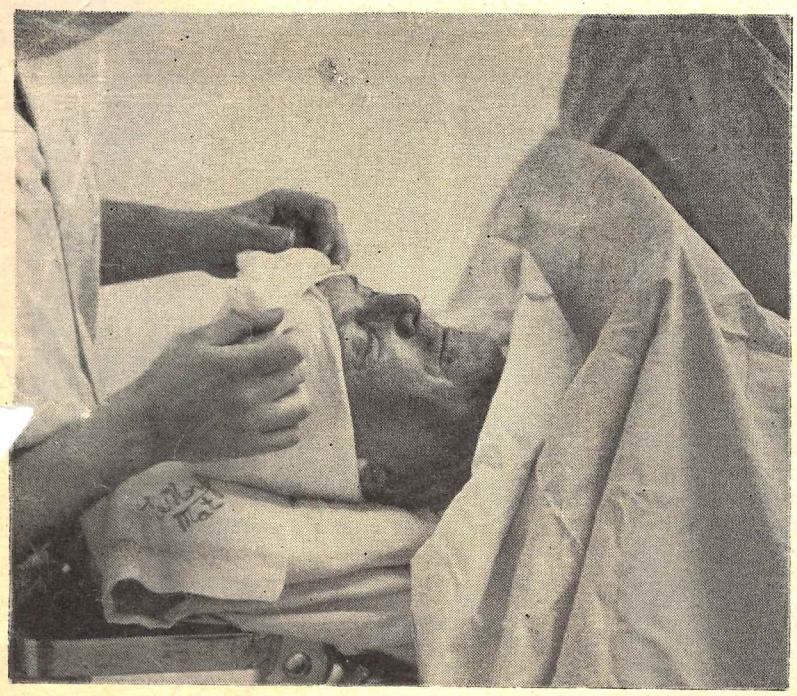
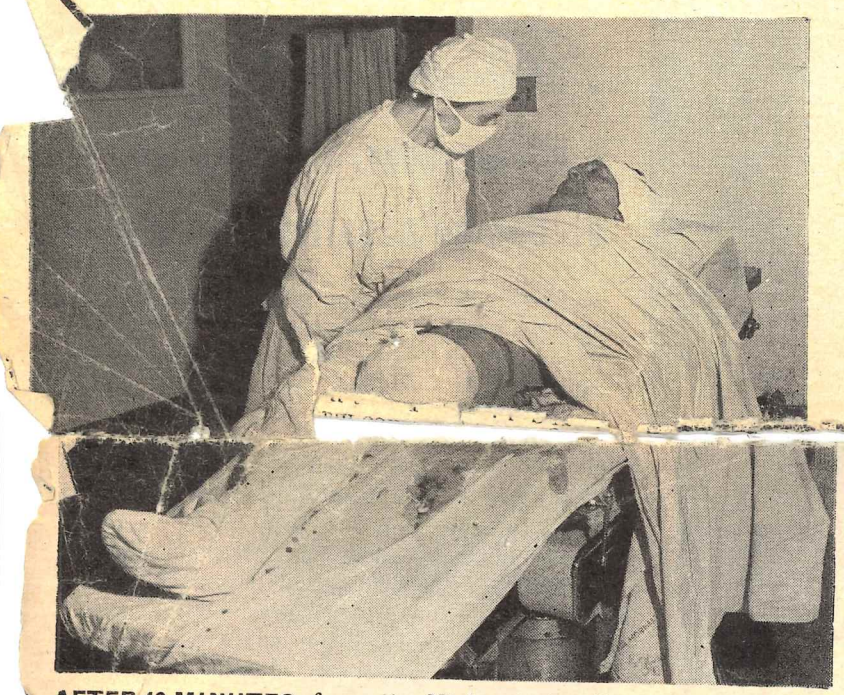


WHILE HIS LEG IS AMPUTATED Niedermier remains fully conscious and free from pain. Although the ice has been removed, no other anesthetic needed. The sensitivity of the leg has been completely deadened by cold.



AFTER 40 MINUTES of operation Niedermier is still able to talk easily with attending nurse. The stump of the leg is now packed with ice again. This delays healing a little but prevents postoperative shock, pain and inflammation.

HALF AN HOUR LATER Niedermier eats lunch, his stump surrounded with four ice bags. Convalescing quickly, without pain or complications, he was able to get out of bed into a wheelchair seven days after the operation.

960/109

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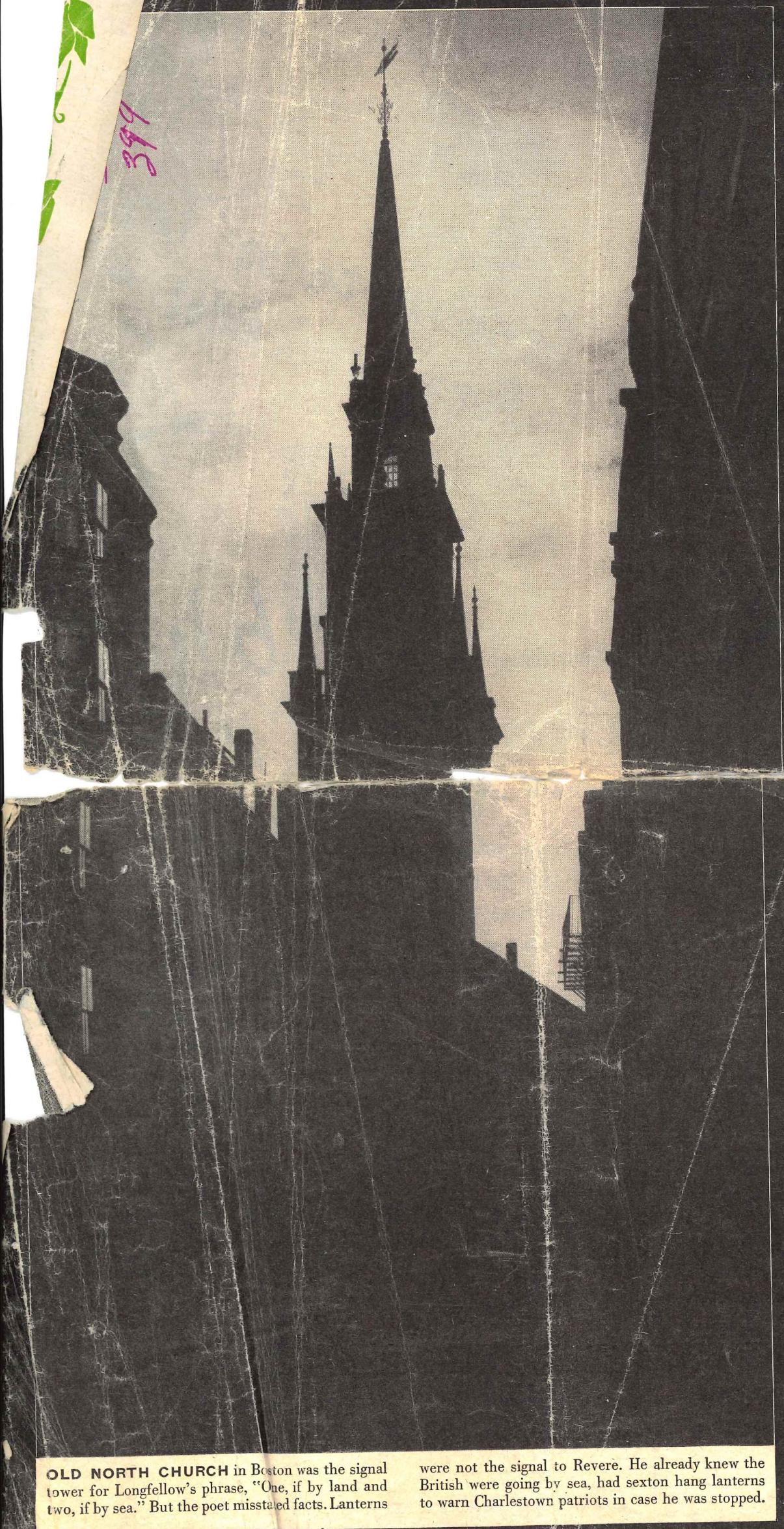
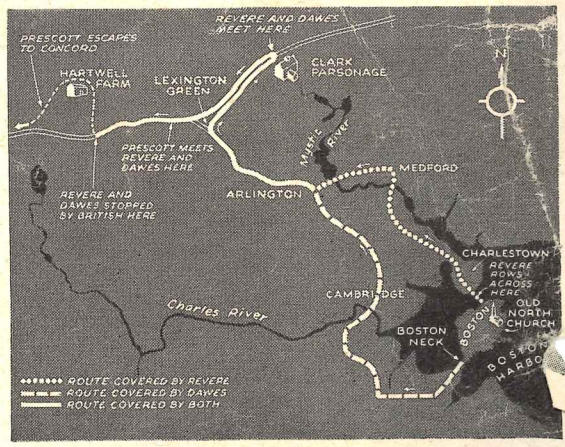


OLD NORTH CHURCH in Boston was the signal tower for Longfellow's phrase, "One, if by land and two, if by sea." But the poet misstated facts. Lanterns were not the signal to Revere. He already knew the British were going by sea, had sexton hang lanterns to warn Charlestown patriots in case he was stopped.



REVERE BEGAN AT BOSTON, ALMOST MADE CONCORD

Life Follows the Route of Paul Revere

A photographer retraces the ride of Boston's patriot silversmith

At 10 o'clock in the evening of April 18, 171 years ago this week, Paul Revere, a 40-year-old Boston silversmith, set out on an errand which a poem, published 86 years later by Henry Wadsworth Longfellow, has since made the most famous ride in U.S. history. Longfellow, [illegible] with poetic license. To clarify some of the facts LIFE's Photographer Kosti Ruohomaa followed Revere's route (*above*) and took these pictures of important spots along the "Midnight Ride."

Paul Revere started from his house in North Square, rowed around the stern of the British man-of-war *Somerset* guarding the harbor and landed on the shore at Charlestown. There he borrowed a horse and set off for Lexington, about 15 miles away, to warn Revolutionary Leaders Sam Adams and John Hancock that the British army was marching out to arrest them.

He had hardly started when he was ambushed by a British patrol, but he escaped, changed his course and crossed the Mystic River twice, warning every householder in his path. Racing into Lexington, he woke Hancock and Adams in the Clark parsonage, and they got ready to escape north. His job done, Revere relaxed by the fire.

But at 12:30 Billy Dawes, a Boston cordwainer, who had come with the same message over the land route (*see map*), arrived and the two riders decided to go on to Concord. As they left Lexington they were joined by Dr. Samuel Prescott, returning to Concord after a late date with a Lexington girl. The three men were ambushed near Hartwell farm, but Dawes and Prescott escaped.

Revere's captors took his horse and freed him, whereupon he walked back to the parsonage and helped Hancock and Adams get away. Then he went to Buchman's Tavern to get Hancock's trunk. As he came out of the tavern, the sun was just rising and he saw the redcoats march onto the green and halt before the milling crowd of Minute Men. At this moment the historic shot was fired. But Revere, not realizing the importance of this skirmish, picked up the trunk and calmly walked away.